

STAFF RECOMMENDATION

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NCPC File No. 6861



FORT BELVOIR ENGINEERING PROVING GROUNDS INFRASTRUCTURE

Fairfax County, Virginia

Submitted by Department of the Army

August 28, 2008

Abstract

The Department of the Army has submitted preliminary and final site development plans for utility lines, roadway improvements, and a bridge at the Engineering Proving Grounds (EPG) of Fort Belvoir, Virginia. The EPG is approximately 806 acres of undeveloped land, located about 5 miles northwest of the Main Post at Fort Belvoir. By 2011, the total proposed campus development for the EPG will support over 2 million square feet of facilities and structured parking for about 5,000 cars. The EPG will hold the National Geospatial Intelligence Agency New Campus East, a Remote Inspection Facility, an Emergency Services Center and other uses. The new infrastructure is proposed to support the facilities that will locate within the EPG.

Commission Action Requested by Applicant

Approval of preliminary and final site development plans pursuant to 40 U.S.C. § 8722(b) (1).

Executive Director's Recommendation

The Commission:

Approves the preliminary and final site development plans for the East North Loop Road utilities, access improvements at Backlick Road/ Barta Road intersection, and power substation rough grading at the Engineering Proving Grounds, Fort Belvoir, Virginia, as shown on NCPC Map File No. 3101.00(38.00)42597; and,

Approves the preliminary site development plans for the South Loop Road Bridge over SL-4 Wetlands at the Engineering Proving Grounds, Fort Belvoir, Virginia as shown on NCPC Map File No. 3101.00(38.00)42597; and,

Notes that Fairfax County, Virginia has submitted comments about the proposed infrastructure and the Department of the Army should take into consideration these comments as they move forward with the project.

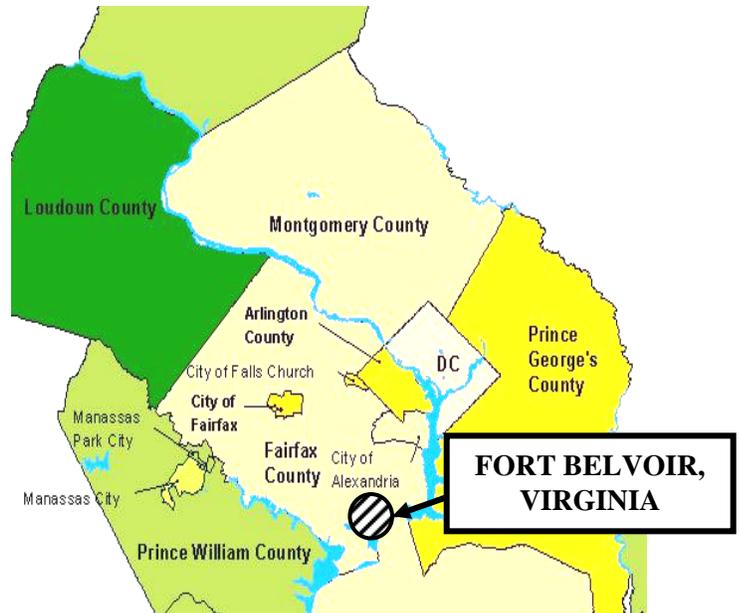
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PROJECT DESCRIPTION

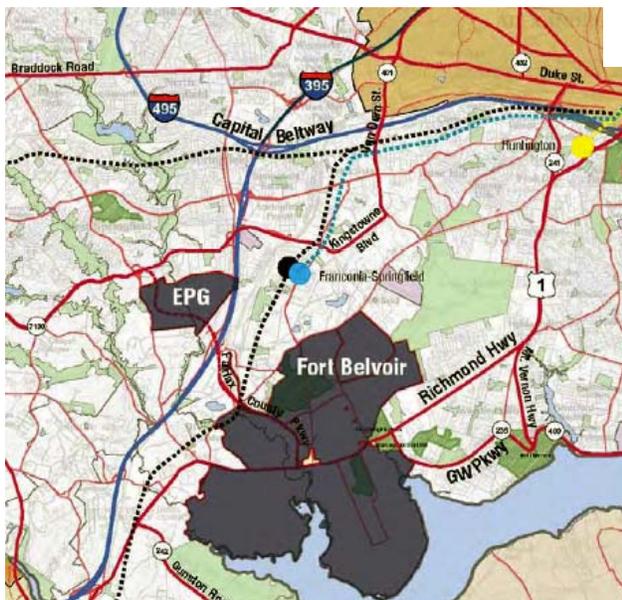
Site

The Engineering Proving Ground (EPG) at Fort Belvoir, Virginia is located approximately two miles northwest of the Fort Belvoir main post, near Interstate Route 95. The northern edge of the property is approximately 0.75 miles south of the Franconia-Springfield Parkway. The Fairfax County Parkway extension will be adjacent to the EPG site, along its western border area, when construction of the Parkway is complete.

The EPG site is bisected by the Accotink Creek into eastern and western halves known as East and West EPG, respectively.



REGIONAL LOCATION OF FORT BELVOIR, VIRGINIA



VICINITY PLAN SHOWING RELATIONSHIP OF THE EPG SITE TO THE MAIN POST OF FORT BELVOIR

Background

As a result of the Base Realignment and Closure (BRAC) of 2005, Fort Belvoir will experience an influx in facilities and in workforce. Currently an undeveloped 806-acre site, the total proposed campus development for the EPG will support over 2 million square feet of facilities and structured parking for about 5,000 cars. The EPG will hold the National Geospatial Intelligence Agency New Campus East, a Remote Inspection Facility, an Emergency Services Center and other uses.

The following are past Commission actions pertaining to Engineering Proving Grounds:

The Commission commented favorably on the consolidation of the NGA at Fort Belvoir and its concept site and building plans on September 6, 2007, as shown on NCPC Map File No. 3101.00(38.00)-42293.

At its October 4, 2007 meeting, the Commission approved a master plan land use modification from research and testing to professional/institutional use for the NGA campus at the Engineering Proving Grounds (EPG), and approved the preliminary and final site and building plans for the Tech Center and Central Utility Plant for the National Geospatial-Intelligence Agency at Fort Belvoir, Virginia, as shown on NCPC Map File No.3101.00 (38.00)-42381.

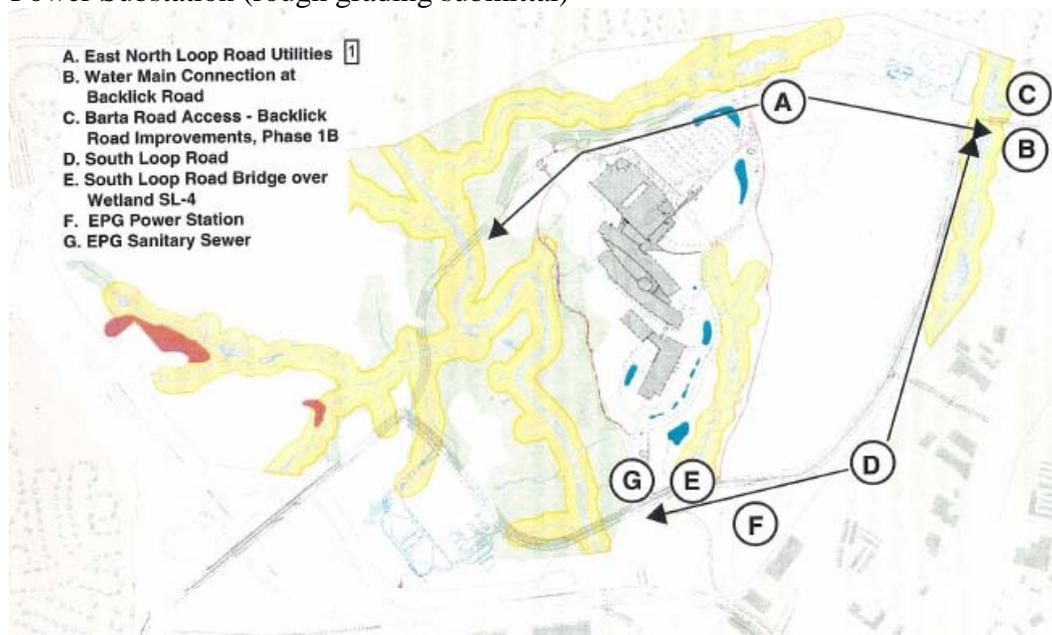
Also in October 2007, the Commission approved the preliminary and final site development plans for the North Loop Road, Bridge, Stormwater Management Facilities, and Perimeter Fence at the National Geospatial-Intelligence Agency at Fort Belvoir, Virginia, as shown on NCPC Map File No.3101.00 (38.00)-42382.

In February 2008, The Commission approved the preliminary and final building plans for the National Geospatial-Intelligence Agency Main Building at the Fort Belvoir Engineering Proving Grounds, Fort Belvoir, Virginia, as shown on NCPC Map File No. 3101.00(38.00)-42457, and the NGA Transportation Management Plan report.

Proposal

The EPG infrastructure will include four projects:

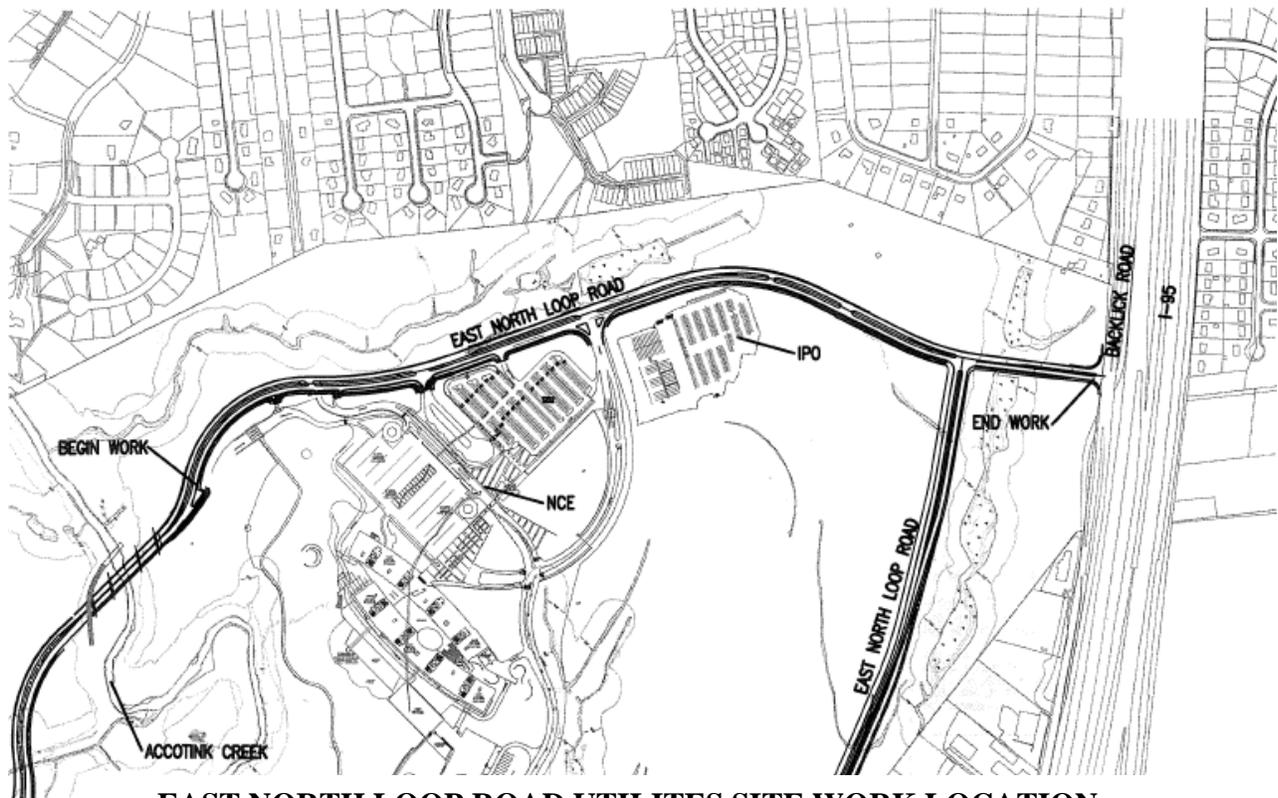
1. East North Loop Road utilities
2. Access improvements at Backlick Road/ Barta Road Intersection Phase 1B
3. South Loop Road Bridge Over Wetlands (30 percent submittal)
4. Power Substation (rough grading submittal)



INFRASTRUCTURE LOCATION WITHIN THE EPG SITE

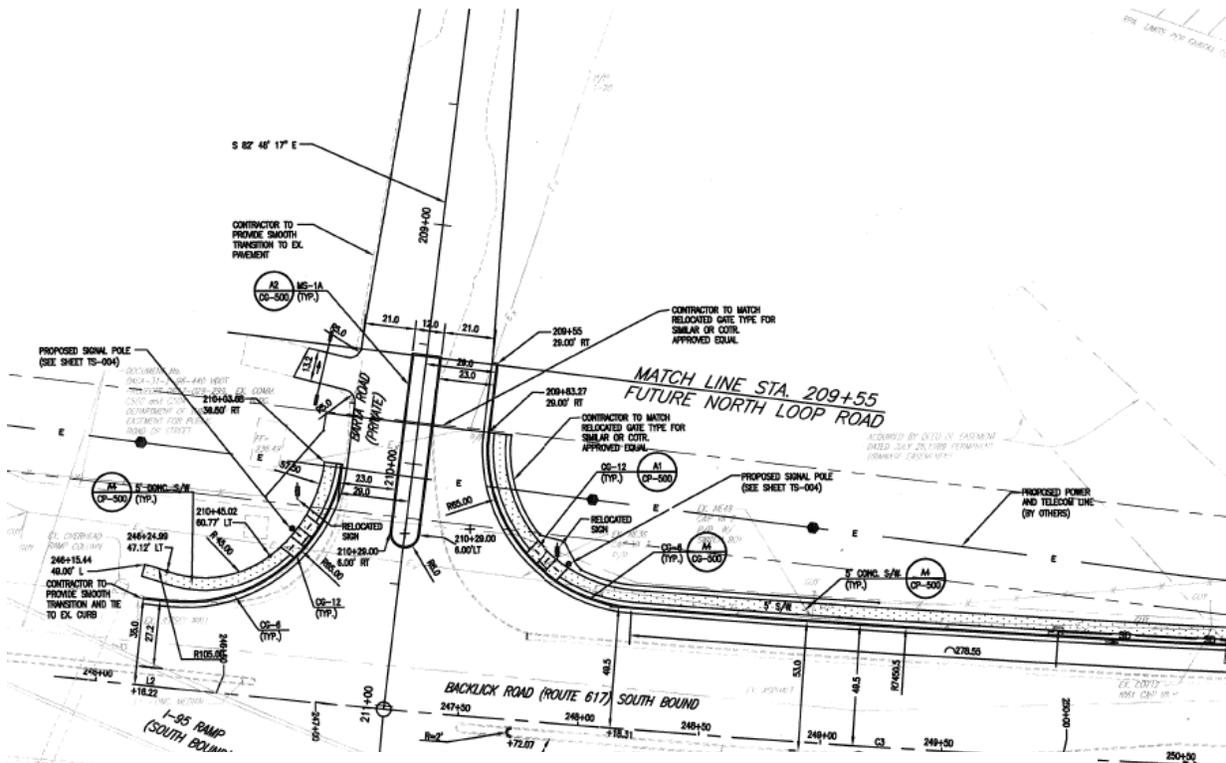
Projects labeled B, D, and G are anticipated to be reviewed by the Commission in October 2008

The *East North Loop Road utilities* include a new water distribution system and telecom ductbanks within the corridor of the East North Loop Road. The project assumes the construction of the utilities will take place along with the roadway related construction. The Water Distribution System is an 18-inch water pipe that will connect to Fairfax Water's existing 36-inch water line along Backlick Road. The pipe will extend approximately 5,700 feet from east at the connection at Backlick Road to the west at a hydrant east of Accotink Creek. The proposed telecommunication ductbanks will connect to an existing telecom manhole along Backlick Road at the east side of the site and run along the southern side of the East North Loop Road. The ductbanks will be 12 ways 4" PVC schedule 40 encased with concrete.



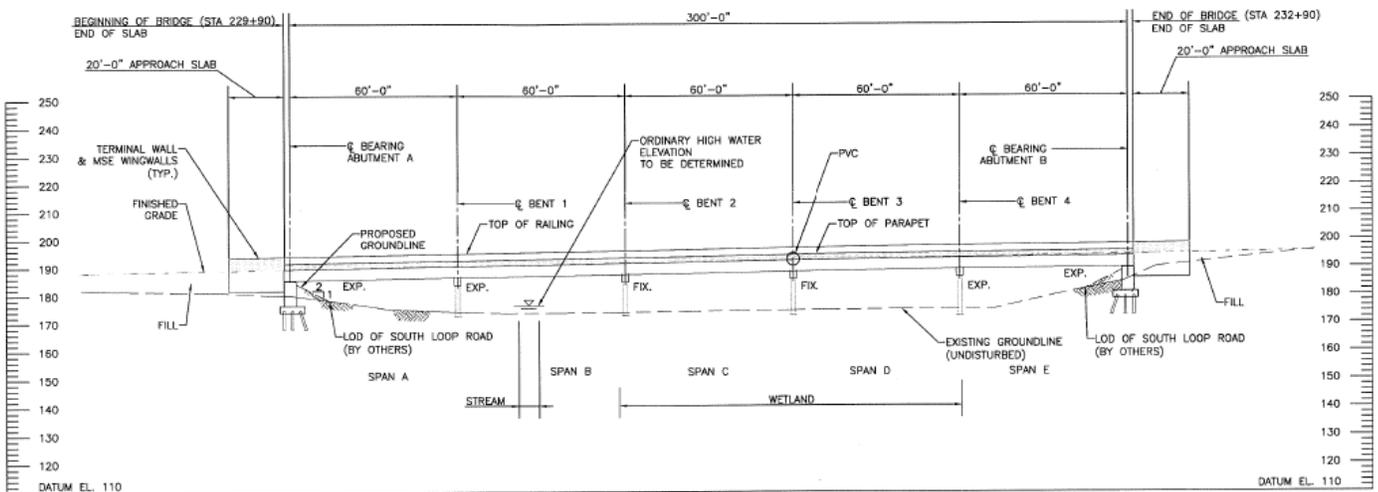
EAST NORTH LOOP ROAD UTILITES SITE WORK LOCATION

Access improvements at Backlick Road-Barta Road Intersection Phase 1B is a proposal to construct a southbound right turn lane along Backlick Road at Barta Road entrance. Improvements also include a new sidewalk along the west side of Backlick Road and a new traffic signal at the intersection. The proposed improvements will follow Virginia Department of Transportation standards and guidelines. The construction activities for the project will include clearing and grubbing, site grading, new pavement, curb and gutter, drainage structures, sidewalk, signal, signing and pavement markings.



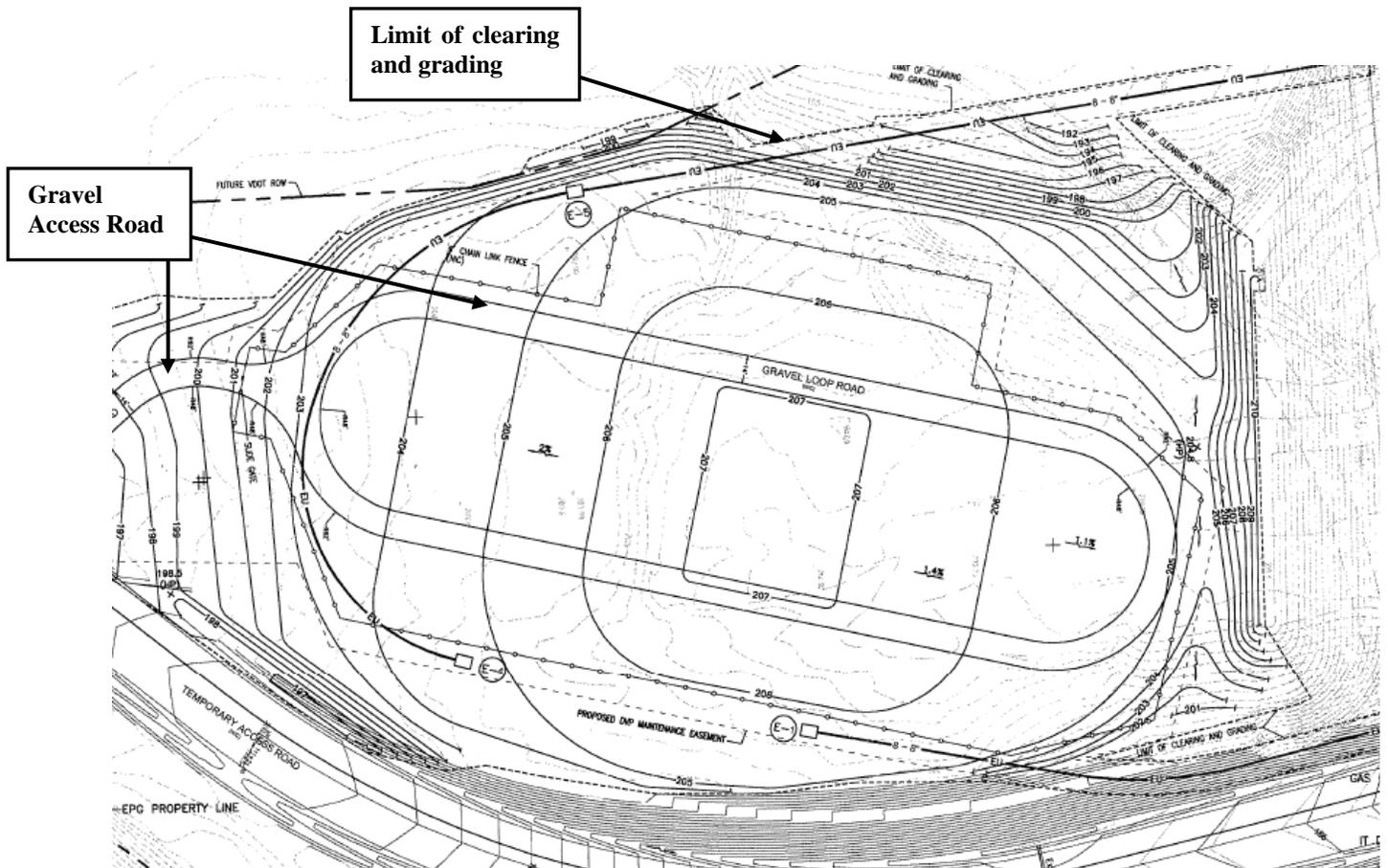
BARTA ROAD – BACKLICK ROAD ACCESS IMPROVEMENTS

South Loop Road Bridge over Wetlands is the construction of the bridge that will carry South Loop Road and the multi-use trail over wetlands. The roadway width will be 33 feet with an additional 14 feet for the trail. The bridge will be a trestle-type and will be constructed of precast concrete girders. The substructures will be comprised of a single row of precast concrete pillars, connected by cast-in-place concrete pile cape.



SOUTH LOOP ROAD BRIDGE ELVEATION

EPG Power Substation includes the rough grading of the site and installation of two electric ductbanks. The proposed rough grading is to provide a graded site for Dominion Virginia Power to provide electricity to the NGA-NCE site. The substation site will follow their design standards and guidelines.



POWER STATION SITE PLAN

PROJECT ANALYSIS

Staff recommends approval of the preliminary and final site development plans for the North Loop Road utilities, access improvements at Backlick Road/ Barta Road intersection (Phase 1B), and the power substation rough grading at the Engineering Proving Grounds at Fort Belvoir, Virginia. The proposed infrastructure is necessary for the operation of the National Geospatial Agency building as well as other buildings that are proposed for the EPG site. The utilities at North Loop Road will be constructed along side the construction of the road, which the Commission approved in October 2007, therefore limiting the area of disturbance. Barta Road is anticipated to be the major entrance for the EPG; the access improvements at the

Barta Road and Backlick Road intersection will allow for additional capacity to accommodate the increased traffic to the site.

The South Loop Bridge was submitted to NCPC for preliminary and final site plans. However, the design for the bridge is at 30 percent design phase therefore only allowing for preliminary review of the bridge. The Department of the Army has been notified and has agreed to preliminary approval. The bridge final design will come for approval of final site plans later this fall. Therefore, **staff recommends approval of preliminary site development plans for the South Loop Bridge, at the Engineering Proving Grounds at Fort Belvoir, Virginia.**

CONFORMANCE

Comprehensive Plan for the National Capital

The *Comprehensive Plan for the National Capital: Federal Elements* states the following polices:

Site Federal employment in areas that would contribute to the health, safety, welfare, and productivity of federal employees; and

Ensure that safe and healthy working conditions continue to be provided and maintained at all sites and in all buildings occupied by the federal government.

(Federal Workplace Element, Development of Workplaces with Communities Policies-Working Environment, Policy #1 and 2)

Furthermore, the *Comprehensive Plan for the National Capital: Federal Elements* includes the following policy:

Guide the long-range development for all installations on which more than one principal building, structure, or activity is located or proposed through a master plan. Agencies should review master plans on a periodic basis to ensure that both inventory material and development proposals are current. Such reviews should be conducted at least every five years. Agencies should advise the Commission of the results of such reviews and provide to the Commission a proposed schedule for revising master plans when updating is determined to be needed. Revisions to master plans should reflect changed conditions and provide an up-to-date plan for the development of the installation.

(Federal Workplace Element, Development of Workplaces with Communities Policies-Coordination with the Community, Policy #10)

Fort Belvoir Master Plan

The Commission approved, in October 2007, a land use modification to the existing 1993 Master Plan. An updated Fort Belvoir Post Master Plan, essentially covering the main post with incorporation of the elements of the EPG, will be officially submitted to NCPC for review in the fall of 2008.

National Environmental Policy Act (NEPA)

In conformance with its NEPA compliance procedures, the U.S. Army completed an Environmental Impact Statement (EIS) for the new infrastructure, with the final EIS issued July 2007. An Army Record of Decision was signed by the Army on August 7, 2007, which completed the NEPA review of the Army and its activities on the EPG.

The project is a proposal outside the District of Columbia and consequently the Commission does not have an independent NEPA responsibility in accordance with NCPC Environmental and Historic Preservation Policies and Procedures.

National Historic Preservation Act (NHPA)

Historically, the EPG site was used as a testing ground during World War II. After the Army acquired the site in the early 1940s, the Army used the site to test its engineering equipment and supplies. Testing activities dwindled in the 1960s and 1970s as neighboring commercial and residential development increased. In 1989, the Research, Development, and Engineering Center that operated on the EPG section of the Fort Belvoir area returned the property to Fort Belvoir Garrison control.

All properties within the EPG were recorded and evaluated by the Army in its planning. None of the EPG site area is considered eligible for the National Register, and no areas are designated on any state or local registers (New South Associates, 2006 as reported in the FEIS). A review of the Fairfax County Inventory of Historic Sites, current Fairfax County Historic

Overlay Districts, the Virginia Landmarks Register and the National Register show that no listed resources or historic overlay districts are in close proximity to the EPG site (FEIS, July 2007). NCPC does not have an independent Section 106 responsibility as result of the project location outside the central area.

Federal Capital Improvements Plan

The 2008-2013 Federal Capital Improvements (FCIP) program identified new infrastructure projects at Fort Belvoir. The Commission on September 6, 2007 adopted the final FCIP. The project was noted as requiring additional planning coordination.

Total costs for the new infrastructure were specified in the FCIP program review at \$152,000,000. However, the Engineering Proving Grounds is only a portion of Fort Belvoir and not all of infrastructure will occur there. It is noted in the FCIP that the Fort Belvoir infrastructure will include a communications center, communication lines, access control facilities, underground electrical lines with substation, transformers and switches; hot water and chilled water generation plants, hot water and chilled water distribution lines, elevated potable water storage tank, water distribution mains and laterals; sanitary sewer main and laterals, natural gas pipelines, storm water collection and management structures, roads, bridges and perimeter fencing. Supporting facilities for communications center include the extension and connection of all necessary utilities, paving, walks, curb and gutters, local storm management, site work and landscaping.

CONSULTATION

Fairfax County, VA

The proposed infrastructure was referred to Fairfax County, Virginia on June 6, 2008. NCPC received comments from Fairfax County, dated August 1, 2008. Along with the North East Loop Road utilities, Barta Road/ Backlick Road access improvements, power substation grading, and the South Loop Road bridge, a EPG sewer system, rough grading for South Loop Road, and a water pipe connection to Fairfax Water were referred to Fairfax County; these projects are anticipated to be reviewed for the October 2, 2008 Commission meeting. Attached are Fairfax County's comments. The Department of the Army should take into consideration the comments of Fairfax County while they move forward with construction.

ATTACHMENTS ON FOLLOWING PAGES

**Engineer Proving Grounds (EPG)
Preliminary and Final Infrastructure Plan Submission
Comments from Fairfax County, Virginia
August 1, 2008**

Cultural Resources and Heritage Resources

- Archaeology has been done to identify archaeological sites at the EPG and further archaeological investigations have been conducted to determine whether any identified archaeological sites are eligible for inclusion in the National Register of Historic Places. Should any sites be eligible for inclusion in the National Register of Historic Places, mitigation measures would have to be designed to mitigate any adverse effects to these resources. Should any sites be discovered during construction, the Virginia Department of Historic Resources and federal agency would have to be notified, so appropriate measures could be taken. Should human remains be discovered during construction, they would be subject to the provisions of the Virginia Antiquities Act. In this event, work would need to cease in the area where the human remains were found and the Virginia Department of Historic Resources should be contacted.

Non-Motorized Transportation – Pedestrian / Trail

- Much of Accotink Stream Valley that surrounds EPG is owned and managed by Fairfax County Park Authority. This stream valley provides a significant existing and potential trail connections in this area of the County. The design for all road crossings/bridges over Accotink Creek should allow space for future stream valley trail construction, especially under proposed bridges. The internal road trail loops should provide for connections with the trail along the Fairfax County Parkway and any existing or planned stream valley or other recreational trails in the vicinity as shown on the adopted Comprehensive Plan Trails Plan.

Transportation

Barta Road Access – Backlick Road Improvements

This project proposes temporary improvements to the existing Barta/Backlick entrance to the Fort Belvoir EPG site. The project limits along Backlick Road extend for approximately 540 feet along Backlick Road; approximately 100 feet to the south, 440 feet to the north.

- No capacity improvements are shown for left turns on to westbound Barta Road from northbound Backlick Road. To prevent left turn lane traffic

from queuing and disrupting flow on northbound Backlick, a dual left turn lane should be constructed if warranted.

- A private property owner, working with Fort Belvoir, proposed a temporary parking lot along Richmond Highway in the south Lorton area. The need for the lot was stated as most of the construction crew would be arriving from point south along the I-95 corridor. A similar assumption could be made about construction crews at EPG. Those crews would most likely exit I-95 at the Fairfax County Parkway interchange at Newington and use northbound Backlick Road to access EPG.
- The traffic signal should display, by default, a green ball signal for Backlick Road. If traffic approaches the signal to enter Backlick Road from Barta, a cycle should be triggered by a vehicle sensor device (loop or camera) on an as needed basis. Button-activated pedestrian signals should be installed to allow a pedestrian to trigger a cycling of the signal to cross Backlick Road.
- The traffic signal should allow right turns, via a green arrow, to westbound Barta Road from southbound Backlick Road as traffic exiting the site (eastbound on Barta) has a green light [right turn overlap].
- Traffic signal timing in the vicinity of the project (including signals at Backlick and Fullerton, Backlick and the Franconia-Springfield Parkway ramps, Fairfax County Parkway and I-95; and at Fullerton and the Fairfax County Parkway, among others) should be studied in conjunction with other EPG site access improvements. Changes should be made – if only temporary – to ensure an optimal flow of traffic.
- The plans note a “future right turn extension (by others)” for the right turn lane from southbound Backlick to westbound Barta Road. The turn lane extension, as shown, extends for approximation 250 additional feet. Dates for the opening of the extension and detail of what agency(s) will construct and fund the extension need to be outlined.
- The plans note a gate at the entrance, approximately 200 feet from the edge of Backlick Road (existing). The gate should not be closed or be required to be activated during construction hours. At the noted location, traffic could backup or block Backlick Road during periods of heavy EPG-bound travel. If the gate needs to be used for security purposes during construction hours it should be moved to a point further west where EPG-bound traffic will not impede the travel lanes of Backlick Road.
- An opening in the median should be accommodated along Barta west of Backlick before the gate to accommodate errant vehicles turning in to the

pre-gate area. This will allow vehicles to return to Backlick without having to negotiate maneuvers if vehicles are queued behind.

- Lane closures along Backlick Road during construction of the improvements should be limited to off-peak periods and/or weekends. Plans should be developed to mitigate traffic congestion during peak travel periods.

Loop Roads

Comments on the EPG internal loop roads (North Loop Road and South Loop Road).

- Provisions should be provided at loop road intersections to be used by transit and shuttle vehicles to allow for buses to “queue jump” at on-base intersections. Queue jumping allows transit vehicles to use dedicated lanes or space to move to the front of the line at red traffic signals or other locations where traffic queues would form. This will allow for priority for buses that will shuttle employees and/or visitors to and from the site to off-site locations, such as the Franconia-Springfield Metro station or Fort Belvoir main post. Transit priority will be an important TDM component as parking is only being provided or approximately 60 percent of the EPG employees.
- Any security gates or checkpoints should be located far enough in to the EPG site to prevent EPG-bound traffic from backing up on to the future Fairfax County Parkway, future access road north and east of existing Rolling Road (the “Phase II” interchange) and at the Barta/Backlick entrance.

Water Main Connection (Backlick Road)

- Eliminating a travel lane on Backlick Road during construction of the water line connection may create delays during peak periods. Plans should be developed to mitigate traffic congestion during peak travel periods.

Utilities

Fairfax County Water Authority

- Comments from the Fairfax County Water Authority are attached.

Water Resources, Stormwater Management, Water Quality, and Natural Resources

General comments

- There are no known sensitive species within or immediately adjacent to the project area according to the Virginia Department of Conservation and Recreation, Natural Heritage Program data layers. However, documents from Ft. Belvoir environmental assessments indicate the presence of small whorled pagonia on the EPG. In fact, Park Authority staff has heard first hand accounts of people working on the EPG encountering this species. The Department of the Army should work closely with the Virginia Natural Heritage program and other appropriate agencies to prevent negative impacts to the small whorled pagonia and its supporting habitat.
- The proposed road improvements cross the RPA of several tributaries of Accotink Creek. This portion of the Accotink watershed is considered to be in Poor condition and has been assigned a status of Level II – Restoration under the Fairfax County 2001 Stream Protection Strategy. However, the habitat scores are good, meaning that streams have potential for restoration. Any new features introduced into this watershed should be designed and constructed so as to prevent any additional stormwater and water quality impacts to the receiving streams and Accotink Creek. The roadways should be designed with multiple methods of achieving water quality treatment and detention to include conveying water from bridges over streams to stormwater treatment/detention facilities to the greatest extent possible and to strive for a minimization of impacts. Mitigation efforts should be identified and pursued where impacts are unavoidable.
- In the Environmental Impact Statement for Fort Belvoir, there was a commitment to detaining stormwater for new uses at or below pre-development conditions. In addition, there was language which discussed stabilizing degraded streams on-site to improve their condition and offset impacts from site development. The plans provided in packages A-G do not provide sufficient detail to evaluate the adequacy of the planned stormwater and stream portions of the projects. The Department of the Army should adhere to the stated intent of the EIS in ensuring adequate stormwater detention and treatment and stream restoration/stabilization as appropriate to off-set impacts and improve stream function as appropriate.
- The proposed road and infrastructure projects pass through early, mid and possibly late succession upland forest community types as well as bottom land forest and some old field habitat. This mosaic of vegetative communities holds the potential to contain sensitive species and communities. In particular the occurrence of several species of orchids is very possible within the early and mid-succession upland forest areas to include lady slipper and tway blade orchids. The areas impacted by the proposed improvements should be surveyed for sensitive species and efforts made to avoid, minimize and mitigate impacts.

- A report published in 2005 by the USDA Forest Service summarizing bird research at Ft. Belvoir as part of the Partners in Flight Program cites great species richness and recommends establishment and management of warm season grass dominant early succession field habitats where possible. Areas cleared for grading and temporary construction as well as stormwater features associated with road and other infrastructure improvements should be stabilized and maintained for native warm season grass habitat for wildlife as well as water quality benefits.
- The Army should use plants native to Fairfax County to stabilize and landscape areas disturbed under the plans in packages A through G. This practice and benefits of using native plants is promoted and described in some detail by the US Environmental Protection Agency in their publications on Natural Landscaping. For a list of native plant species, see the section on the DNH website titled Native Plants for Conservation, Restoration, and Landscaping at http://www.dcr.virginia.gov/natural_heritage/nativeplants.shtml . Conversely, the Army should avoid using any non-native invasive plants in their temporary seed mixes and permanent plantings associated with the proposed projects. If non-native plants are used they should not be invasive. A list of invasive plant species for the state of Virginia can be found at the Virginia Department of Conservation & Recreation Division of Natural Heritage (DNH) website at <http://www.dcr.virginia.gov/dnh/invinfo.htm> .
- Besides human land disturbance and habitat conversion, the greatest two threats to terrestrial biological communities in our region are invasive plant species and over population of white-tailed deer and the subsequent heavy browse. All project plans for fort Belvoir should contain both a program to control non-native invasive species especially in newly disturbed or high quality biological communities, and should ensure that planned features and activities allow for the continuance of the effective deer hunting program that has helped keep deer populations in check on Ft. Belvoir for many years.
- Because the stormwater management, erosion and sediment control features have been designed by another firm and therefore are not included in these packages, Fairfax County Department of Public Works and Environmental Services, Stormwater Planning Division cannot provide any specific comments to the plans.
- In general, construction of new and renovation of roadways and/or buildings should avoid, minimize and mitigate potential impacts to Resource Protection Areas (RPAs), floodplains and wetlands. These areas represent a sensitive transition zone between upland areas and our

waterways. Encroaching into these areas will further the degradation of the water bodies in Fairfax County as well as the Chesapeake Bay.

- As the percent impervious cover of a parcel increases, the resultant increase in stormwater runoff commonly degrades the biotic and abiotic integrity of those waterways downstream. This can be reduced through various land management practices such as, but not limited to, maintaining or returning to pre-development hydrologic conditions, green infrastructure and best management practices.
- Per the Virginia Erosion and Sediment Control Regulations (4VAESO.30-40.19) and SWM Regulation (AVAC3.20.81), ensure that downstream channels and properties be protected from erosion and damage due to increases in volume, velocity and peak flow. Pursuant to the RPA requirements of the county's Chesapeake Bay Preservation Ordinance, streams with perennial flow are to have 100 foot (or greater) undisturbed buffer along both sides.
- If the RPA and/or wetlands must be disturbed, construction practices should be pursued in a manner that minimizes resource impact. Mitigation of RPA impacts through the establishment of forested riparian buffer areas within the effected watershed (or in nearby watersheds if there is insufficient restoration capacity on site) at least equal to the area of encroachment should be sought. Mitigation of wetland impacts through the establishment of wetland areas within the effected watershed (or in nearby watersheds if there is insufficient restoration capacity on site) at least equal to the area of encroachment should be sought. Because of the already poor biotic and abiotic quality of Accotink Creek, every effort must be made to not increase the level of pollutants that reach this waterway.
- The Fairfax County Department of Public Works and Environmental Services, Stormwater Planning Division requests the opportunity to review future comprehensive plans to provide more detailed comments regarding adequate stormwater management for the site.
- Many of the proposed projects will result in clearing of tree canopy. All efforts should be made to minimize clearing; tree canopy that must be cleared should be replaced, preferably on the property. The Urban Forest Management Division of the Department of Public Works and Environmental Services (703-324-1770) should be contacted for guidance on limiting clearing and on tree planting opportunities.
- The discussions for packages D and G both reference the need for provisions for future site development (possible road widening in the case of Package D and a proposed eastward extension of a new sanitary sewer

line in the case of Package G). What future development is anticipated on the EPG property that would necessitate these measures? How does preparation for future development relate to the Army's agreement to cap employment on the EPG property? How will this be accounted for in future NEPA and master planning documentation? Undefined future potential development at EPG is of concern from a number of perspectives, and guidance is needed regarding what is anticipated.

- Sheets CD101 and CD112 of Package D indicate that the proposed South Loop Road will cross through an "area of known contamination." The narrative for Package G discusses the possible construction of future sewer lines in areas with known contamination. No guidance is provided regarding the implications of construction in this area, although a note provided on sheet C-103 of Package G references the presence of Naphthalene, Benzene and Carbon tetrachloride. The Fairfax County Health Department has provided a series of questions relating to the potential construction of sanitary sewer infrastructure in this area (without the benefit of the plan packages and without knowledge of the proposed road location in this area), and these questions would appear to be relevant to the proposed road construction as well. These questions should be relayed to NCPC for consideration. Will the area of contamination along the proposed road alignment be cleaned of all contamination prior to any road construction? If so, who will be overseeing the cleanup efforts and determining when the site is clean? What will be the implications of construction in or near contaminated areas (for the road, sewer, or both) as it relates to potential human exposure and environmental impacts? Are there any migrating plumes of contamination? How will construction in and near contaminated areas potentially affect plume migration? Will any contaminants be exposed during construction? If so, how will workers and future occupants of the site be protected? How will the Army ensure that new conduits for the movement of contaminants will not be created? How will any future construction in these areas relate to site cleanup activities, risk assessment assumptions, and long-term monitoring needs?

Package A: East North Loop Road Utilities Final Design

- The narrative notes that the proposed location of a water line near Backlick Road has been shifted southward from the proposed East Loop Road in order to avoid potential adverse impacts to a wall associated with the road due to a possible water line failure. The southward relocation, though, will impact the edge of a wetland area. Are there other alternative locations for this water line that will not adversely affect wetlands? Disturbance to this area should be avoided if possible and minimized if avoidance is impossible. If wetlands will be disturbed to support the construction of the water line, can wetlands be restored to this area after

construction? If not, where will compensatory wetland restoration efforts be pursued?

Package C – Barta Road Access – Backlick Road Improvements

- The temporary slope drains vicinity stations 207 and 208+50 are not shown as being removed and there is no detail on how stormwater will be treated for detention and to prevent erosion coming off of the steeply graded road bed.

Package D: South Loop Road Rough Grading Submittal

- Reference is made to a ten-foot wide paved trail (wider along the proposed bridge crossing of a wetland) that will be provided along the proposed South Loop Road. Who will have access to this trail? Will it be accessible to the public? If not, why is such a wide trail needed? What will be the anticipated use of this trail, and where will it connect to?
- Sheets CG113 and 115 show steeply-banked stormwater management facilities. The steepness of the banks suggest that there will be highly variable water levels associated with storm events, and it is not clear if this design approach lends itself to ecological enhancements (e.g., high quality native plantings; wetland areas). Also, it is not clear the extent to which, if any, low-impact development or other infiltration techniques of stormwater management will be pursued. Details were not provided regarding pond design, downstream conditions, or how adequate outfall will be ensured (consistent with county requirements) in downstream areas. Coordination with the Stormwater Planning Division of the Department of Public Works and Environmental Services (703-324-5500) is suggested.

Package D – EPG South Loop Road Station 226+10 to 274+52

- There are significant RPA impacts from this roadway. Specifically, the bridge over wetland SL4, the presence of extensive wetlands on east side of project from station 259+50 to 274+30, and filling in the RPA from station 270 to 274+30 seem to pose great potential for natural resource impacts. There is insufficient information in the project plans provided to adequately assess these impacts.
- Will any portion of the culvert down stream of the new bridge vicinity station 231 be removed after construction? The current road section will be cut off by the bridge abutments, and the additional culvert for future Fairfax County Parkway ramps appear to be down stream of the existing culverts.

Package E: South Loop Road Bridge Over Wetlands SL-4 (30% Submittal)

- The narrative indicates that the option of constructing a bridge over a wetland area was selected over an option of constructing a culvert and retaining wall. The bridge option should be supported as the less disruptive approach.
- Both sheet S-100 of Package E and sheets CG113 and CG115 of Package D indicate that the proposed bridge over the wetland area will not span the entirety of the Resource Protection Area associated with the wetland. Rather, the bridge will span the wetland but will require significant encroachments along both RPA boundaries. Why can't the bridge be designed to span the entirety of the RPA in this area? Why are any RPA encroachments needed?
- The narrative references the use of perimeter security lighting on the bridge. Will full cut-off fixtures be used?

Package F – EPG Power Substation

- There is no stormwater detention shown for the substation area.
- The steep slopes around the substation should be stabilized as per comment 5) above.

Package G – EPG Sanitary Sewer Design

- The project will clear, trench, compact soils and stabilize the steep slopes of the Accotink stream valley corridor in order to connect to the large sewer main next to Accotink Creek. The entire utility corridor and both the temporary and permanent easement areas should be stabilized with both native warm season grass mix and native shrubs (the latter due to the steep slope areas).
- There is 10 to 25 feet of cover over many areas of the new sewer pipe. With this extensive cover and the steep slopes, native shrubs would provide essential slope stability while not threatening the integrity of the sewer line. A management regime similar to that used for many years in the power line easements at Patuxent National Wildlife Refuge could be employed. This management method allows shrub species to grow and uses periodic foliar spraying of large woody species on a three to five year maintenance cycle to prevent the establishment of large trees.